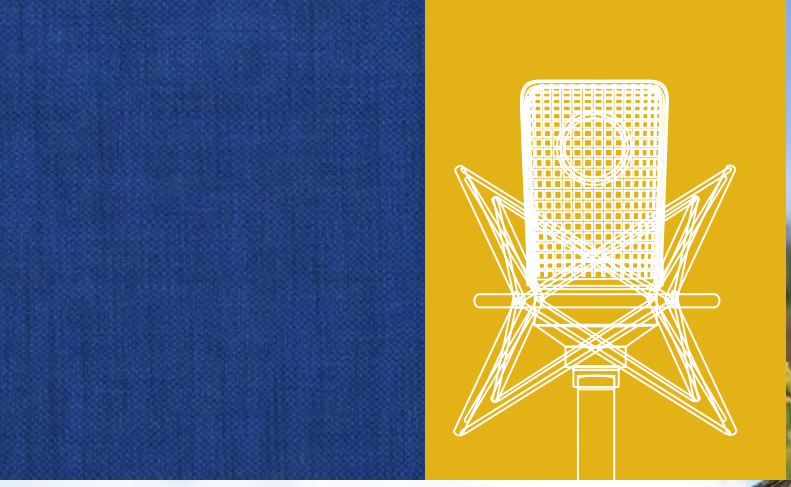

PHOTO CREDIT: LIFELINE ENERGY

HOW IS INTERACTIVE RADIO CURRENTLY BEING USED FOR AGRICULTURAL DEVELOPMENT?

This component provides an overview of how interactive radio is currently being used for agricultural development. It includes illustrative examples from organizations both in Africa and elsewhere, along with contact information, websites, or other resources that you can use to follow up directly to learn more about a given approach.

COMPONENT GOALS

BY THE TIME YOU HAVE FINISHED THIS COMPONENT YOU WILL:

- ✓ *Understand some of the ways that technology is being used to make radio interactive.*

SINCE RADIO IS THE DOMINANT MEDIUM in most agricultural communities, it offers hope for overcoming the limitations of traditional extension. Radio is also a decentralized medium, meaning that it is well-positioned to represent the voice of the community. With advances in technology and the explosion of mobile phones in even some of the most remote areas of the globe, the opportunities to further leverage radio's potential are now greater than ever.

Coupled with the growth in community radio stations in Africa over the past 20 years, these technologies have the potential to completely transform the relationship between listener and content provider. The medium is now changing in new and fascinating ways by adapting to local contexts, developing low-cost and increasingly low-maintenance systems, and capitalizing on the mobile revolution to reach new levels of engagement with audiences. Through more interactive radio, farmers and other community members are being transformed into drivers of content rather than simply passive consumers.

What follows in this component is an overview of seven different organizations working in interactive radio and agriculture. This component is not intended to be comprehensive and should be seen as a starting point for further research. Much of the information below was provided directly by the organizations being highlighted, and have not been independently verified. As such, we encourage readers to do their own due diligence.

FARM RADIO INTERNATIONAL

WHO ARE THEY?

Farm Radio International (FRI) is an international NGO registered in Canada that provides technology, training, and resources to local partners to meet the information needs of smallholder farmers and their families in rural communities. To date, FRI has reached 39 million farmers in participatory radio campaigns conducted by partners.


PHOTO CREDIT: FARM RADIO INTERNATIONAL


PHOTO CREDIT: FARM RADIO INTERNATIONAL

FRI has extensive expertise in a variety of radio and online technologies while focusing on a local ownership model, working in total with over 400 radio broadcasters in 38 African countries.

The organization is a major source of information and training for radio practitioners, in addition to providing research on the impact of ICT-enabled radio in the developing world. FRI has developed competencies in a wide variety of technologies and approaches to support broadcasters, ranging from the most common computing and connectivity needs, scripting, and training to more complex solutions for interactive voice response (IVR) and mobile call-in connectivity. In addition, FRI conducts radio script writing competitions, and provides weekly radio scripts in English and French free of charge to partners in sub-Saharan Africa, where they are translated into hundreds of local languages.

WHAT TECHNOLOGIES ARE THEY USING?

FRI has experimented with a variety of different technologies to enhance radio interactivity and to support radio stations' access to information. Through the African Farm Radio Research Initiative, FRI tested a suite of different technologies for interactivity, including:

- low-cost MP3 players/recorders for field recording
- connecting mobile phones into mixers to facilitate call-ins or call-outs
- GSM modems and SMS management software
- IVR management systems
- rechargeable, recordable radios

HOW ARE THEY MEASURING IMPACT?

As part of the African Farm Radio Research Initiative, FRI partnered with 25 radio stations in five African countries to assess the impact of ICT on their work, with a significant focus on the potential of ICT to increase interactivity. Stations were provided with at least one of six different ICT packages. Over the course of an 18-week period, FRI worked with partner radio stations to collect data on the effectiveness of each package. Stations used log sheets to capture information on how the technology package was used by the station and its listeners. They also conducted periodic phone surveys with a select group of listeners from each station, and online surveys to collect information from radio station staff. Final evaluations were administered to both listeners—in the form of household surveys—and extension agents using Mobenzi Researcher, a mobile phone-based survey tool.

WHERE CAN I GO TO LEARN MORE ABOUT FARM RADIO INTERNATIONAL?

Farm Radio International can be found online at http://farmradio.org/. Their website includes downloadable versions of their research reports, detailed overviews of all of their programs, and resources for broadcasters. If you are interested in learning more about FRI or how you can partner with them, you can contact them at info@farmradio.org.

FREEDOM FONE

WHO ARE THEY?

Freedom Fone is a project conceived and made possible by the Kubatana Trust of Zimbabwe, a civil society NGO committed to the accessibility of human rights and civic information. The core development team of Freedom Fone has been IT46, a Swedish consultancy company, although the Kubatana team is currently working to bring its user interface design efforts in house. It is currently deployed by 23 partner organizations.

HOW IS THEIR WORK USEFUL FOR INTERACTIVE RADIO?

Freedom Fone is an interactive voice response system that makes it possible for anyone with a phone to access or contribute information on a specific topic at any time. Using interactive voice menus, it enables broadcasters to liberate their audio content from the constraints of a specific radio broadcast timetable, to organize polls, and for the audience to provide their perspective for future review and playback. This includes functionality for creating multiple-language menus and callback capability to reach populations hardest to reach due to cost barriers.

While the system also includes functionality to send and receive SMS, its main advantage is its use of audio, thus removing any literacy barriers that may exist. No internet access is required for the system to function, although Freedom Fone is laying the groundwork for a cloud-based system in the future.

WHAT TECHNOLOGIES ARE THEY USING?

The core of the system is a GSM gateway device that accommodates up to 4 SIM cards called the 2N OfficeRoute. It costs about US$1,500, and enables a station to receive multiple voice calls and SMS messages at once. In addition, to run Freedom Fone it is also highly recommended that users have a dedicated computer to use as a server and an uninterruptible power supply (UPS) backup device.

HOW IS IT BEING USED?

Freedom Fone has been built and deployed as both a standalone system and one that is connected to the internet. In conjunction with FRI's AFRRI project, two radio stations—Volta Star in Ghana and Radio Maria in Tanzania—have used Freedom Fone's IVR to make broadcast information available at any time. Market prices, previous broadcasts, news bulletins, and weather reports are also made available. This service was set up to be on demand, via calling in to the system. The voicemail box feature of the IVR can also be used to gather feedback from listeners.

FRI reports that Freedom Fone IVR experiments showed that farmers are willing to spend their mobile phone airtime accessing relevant information as long as it is concise. They have found that the average length of a call is 120 seconds, so callers need to be able to find what they want in less than two minutes.

WHERE CAN I GO TO LEARN MORE ABOUT FREEDOM FONE?

You can learn more about Freedom Fone on their website at http://www.freedomfone.org/. Their website includes detailed information on how their system works, and also features a demo of the software. You can contact them at info@freedomfone.org.

FRONTLINESMS:RADIO

WHO ARE THEY?

FrontlineSMS is an initiative of Kiwanja.net, an organization founded by technologist Ken Banks. It is an open source software platform that enables users to send and receive text messages with large groups of people without internet access. Originally conceived as a means of engaging communities surrounding Kruger National Park in South Africa in conservation efforts in 2004, it has since expanded to being used for dozens of purposes in at least 80 countries.

FrontlineSMS:Radio is a tailored version of the core technology of FrontlineSMS, and enables radio stations to use a laptop, mobile phone, or GSM modem to manage SMS communications with their audience. Although the first version of the program was standalone, the latest version is browser based, and is the foundation of a cloud-based model. It has been deployed to over 20 radio stations thus far.

HOW IS THEIR WORK USEFUL FOR INTERACTIVE RADIO?

The platform essentially creates a robust email interface for text messages, enabling radio stations to quickly receive and synthesize feedback, engage listener perspectives, gauge interest in broadcast topics, and conduct extensive research over time that can inform programming decisions.

At Rite FM in Kenya, a commercial station for agriculture and social development, FrontlineSMS:Radio is used to give listeners another option to connect with radio hosts and to deliver information the audience requests. The station reports that for shorter shows and for particular audiences, SMS provides another way to sound out on the topic of the day. On a good day, the station expects 10 responses via SMS from listeners.

Other stations—like FADECO Radio in the Karagwe district of Tanzania—report that the service helps them overcome geographic isolation and provides the means to connect with their audience. The station created a local SMS subscription service providing information on programming and the weather, attracting 200 users. One FADECO radio program is even based on questions received from farmers via SMS, which the station researches and reports back to the audience on the following broadcast.

WHERE CAN I GO TO LEARN MORE ABOUT FRONTLINESMS:RADIO?

To learn specifically about FrontlineSMS's work with radio, visit them online at http://radio.frontlinesms.com/. The site includes stories from community radio stations sharing how they have used FrontlineSMS. To download a copy of FrontlineSMS for yourself, visit their main page at http://www.frontlinesms.com/. You can contact them at info@frontlinesms.com.

GRAM VAANI

WHO ARE THEY?

Gram Vaani is a technology company and social enterprise based at the Indian Institute of Technology in Delhi. The company focuses on building open-source technologies for community media in rural areas. It works with communities to design accessible technology solutions using primarily existing infrastructure with an aim of making information flows more efficient, and more egalitarian. Most of their products are voice based, so that they can be used by illiterate and partially literate users. The organization partners with development agencies, NGOs, and government agencies to deploy these tools.

HOW IS THEIR WORK USEFUL FOR INTERACTIVE RADIO?

One of the tools developed by Gram Vaani, the Grameen Radio Inter-Networking System (GRINS), is a low-cost radio management system. It allows users to automate many of a radio station's most complex tasks. It enables radio station operators to schedule broadcasts, preview programs, make and receive phone calls, record live transmissions, stream over the internet, view analytics, and maintain a searchable library, all through a single user interface. To date, its greatest utilization has occurred in India, but in total it has been used by stations with 2.5 million listeners in six countries with more than 25 NGO clients. Future versions of the device aim to enable internet-connected community radio stations to share content with others and will include additional IVR functions to further engage listeners.

WHAT TECHNOLOGIES ARE THEY USING?

The GRINS box is a plug-n-play server that community radio stations use in place of their playout computer. The device can interface with multiple devices, such as microphones, telephone lines, GSM gateway devices, and the station's mixer.

WHERE CAN I GO TO LEARN MORE ABOUT GRAM VAANI?

More information about Gram Vaani and GRINS can be found on their website at http://www.gramvaani.org/. The site includes an overview document on GRINS, but for more detailed information you should contact them directly at contact@gramvaani.org.

FARMER VOICE RADIO

WHO ARE THEY?

Farmer Voice Radio is a project created by a 2009 grant to the American Institutes for Research by the Bill & Melinda Gates Foundation. In its initial three-year 'proof of concept' phase, FVR has developed a multi-faceted methodology to support radio practitioners, first in Kenya and Malawi, with expansion in 2011 to Tanzania and Uganda. FVR currently works with 32 radio services in the four countries. In late 2012, FVR operations will transition to a newly established Kenyan NGO, Kilimo Media International (KiMI).

HOW IS THEIR WORK USEFUL FOR INTERACTIVE RADIO?

The FVR model is designed to overcome gaps in the traditional agricultural extension in sub-Saharan Africa. At both national and local levels, FVR links existing agricultural extension officers to a radio-based system and a consortium of key partners to ensure sustainability, message clarity, and impact programming. The idea is to build organizational structures that cultivate buy-in from officials, extension agents, radio partners, and local stakeholders.

FVR does not create content itself, but has developed 14 different programming formats with partners, including one-minute 'Ag Tips' that are circulated to FVR partner stations. In addition, automated software

developed by the ICON Group provides weather information in local languages for radio hosts to 'rip and read,' as well using TotoAgriculture, an automated dashboard of agricultural information.

FVR facilitates the recording and capture of relevant expertise, helps scale it to a mass radio audience, and uses mobile technology to generate a two-way conversation with farmers to support effective behavior change. This includes engaging with radio stations to secure free airtime, training radio teams to capture content in the field, and setting up a research desk at every station to both push information via SMS and pull feedback from farmers.

In Uganda, for example, they are working in partnership with the Grameen Foundation's Community Knowledge Worker (CKW) program. Farmer stories and questions are recorded by CKWs, who then send the clips to local radio stations via their mobile phone. This content is used by the stations to inform their programming, and sometimes even broadcast on the air.

WHAT TECHNOLOGIES ARE THEY USING?

FVR and its partners utilize a variety of technologies, including low-cost MP3 players/recorders for field recording, GSM modems and SMS management software, and IVR management software.

WHERE CAN I GO TO LEARN MORE ABOUT FARMER VOICE RADIO?

To learn specifically about Farmer Voice Radio, visit http://www.farmervoice.org/. The site is currently fairly basic, but includes core elements of their methodology and a blog with detailed examples of their work.

LIFELINE ENERGY

WHO ARE THEY?

Lifeline Energy is a non-profit, humanitarian organization based in London and registered in the United States that develops wind-up and solar powered radios and lights. It has been working as a provider of off-the-grid radios and lights for low-resource environments since 1999, with particular focus on sub-Saharan Africa.

HOW IS THEIR WORK USEFUL FOR INTERACTIVE RADIO?

In 2010, Lifeline Energy released the Lifeplayer MP3, a rechargeable and recordable rugged media player and radio. Its ability to recharge off-the-grid and record live radio broadcasts makes it a potentially useful tool for radio listening groups or radio agents. It also includes a monitoring and evaluation software that can tack listening patterns and usage. In Rwanda, SC Johnson has distributed 225 Lifeplayer MP3s to farming communities producing pyrethrum with pre-loaded content on best farming practices and health information.

WHAT TECHNOLOGIES ARE THEY USING?

The Lifeplayer MP3 uses both solar and wind-up power, and comes with an optional 12V external DC input for use with car batteries or mains electricity. One hour of solar exposure or one minute of wind up can generate enough energy for 30 to 40 minutes of radio play at normal volume. It also includes two SD memory card slots—one internal and one user accessible—that can take up to 32GB of memory each, meaning that content can be pre-loaded or added later.

WHERE CAN I GO TO LEARN MORE ABOUT LIFELINE ENERGY?

More information about the Lifeplayer MP3 can be found on Lifeline Energy's website at http://www.lifelineenergy.org or by contacting Kristine Pearson, Lifeline Energy's CEO, at kpearson@lifelineenergy.org.

AVAAJ OTALO

WHO ARE THEY?

Avaaj Otalo is a service that delivers agricultural information over the phone to farmers. It was created for—and is currently managed by—the Development Support Centre (DSC), an Indian NGO, in collaboration with UC Berkeley School of Information, Stanford HCI Group, and IBM India Research Laboratory.

Avaaj Otalo was originally conceived as a complement to DSC's popular weekly radio program, Sajjata No Sang, Lave Kheti Maa Rang (Bringing Color to the Farmlands), which ran for five years on Thursday evenings over All-India radio. The service delivers relevant agricultural information on demand, and offers voicemail box capabilities for farmers to share their questions, experiences, innovations, and experiments. At the time of writing, it was receiving between 60 and 120 calls per day.

HOW IS THEIR WORK USEFUL FOR INTERACTIVE RADIO?

Avaaj Otalo found in the three years that the radio program and call-in service ran concurrently, that voice calls to radio program experienced a rapid decline. DSC found that the transition away from radio allowed them to reach farmers in a more targeted way. In 2012, DSC decided to continue to produce their radio program, but instead distribute it entirely through mobile phones using Avaaj Otalo, thereby saving the costs to broadcast through All-India radio.

In addition, by dialing a phone number and navigating through simple audio prompts, farmers can record, browse, and respond to agricultural questions and answers. Questions are routed to appropriate experts, and saved. The service also includes an announcement board of headline-like snippets updated regularly by DSC staff, and a radio archive to listen to past episodes of DSC's popular weekly radio program. Through Avaaj Otalo, farmers can also subscribe to receive calls several times a week for a small subscription fee with information about the weather, pieces of radio programming, agricultural prices, event announcements, government programs, and more.

WHAT TECHNOLOGIES ARE THEY USING?

Avaaj Otalo runs on the Awaaz.De cloud-based IVR system, which means that users do not need any specific hardware to use the system. Since it is housed in the cloud, radio stations that are managing this system do need a computer and access to the internet in order to interface with it.

WHERE CAN I GO TO LEARN MORE ABOUT AVAAJ OTALO?

The Development Service Centre can be found online at http://www.dscindia.org/. To learn more about how they are using Avaaj Otalo, contact them at dsc@dscindia.org. More information on Awaaz.De, a company working to develop voice-based information services to engage rural and underserved communities, which is responsible for the backend development of Avaaj Otalo, can be found on their website at http:///www.awaaz.de or by contacting them at info@awaaz.de.

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